

6. VEZETÉKMÉRETEZÉS

$$c) R = \frac{\rho \cdot l}{A} = \frac{0,03 \cdot 50}{95} = 0,0158 \, \Omega$$

$$I = \frac{I_W}{\cos \varphi} = \frac{106,96}{0,8} = 133,69 \, A$$

$$P_v = 2 \cdot I^2 \cdot R = 2 \cdot 133,69^2 \cdot 0,0158 = 564,79 \, W$$

$$P_v = 564,79 \, W$$

6.6. feladat

$$a) i_1 = \frac{P_1}{\sqrt{3} \cdot U_v \cdot \cos \varphi_1} = \frac{30000}{\sqrt{3} \cdot 380 \cdot 0,8} = 57,04 \, A$$

$$i_{1W} = i_1 \cdot \cos \varphi_1 = 57,04 \cdot 0,8 = 45,63 \, A$$

$$i_{1m} = i_1 \cdot \sin \varphi_1 = 57,04 \cdot 0,6 = 34,22 \, A$$

$$i_2 = \frac{P_2}{\sqrt{3} \cdot U_v \cdot \cos \varphi_2} = \frac{20000}{\sqrt{3} \cdot 380 \cdot 0,6} = 50,7 \, A$$

$$i_{2W} = i_2 \cdot \cos \varphi_2 = 50,7 \cdot 0,6 = 30,42 \, A$$

$$i_{2m} = i_2 \cdot \sin \varphi_2 = 50,7 \cdot 0,8 = 40,56 \, A$$

$$e_{meg} = \frac{\rho}{100} \cdot \frac{U_v}{\sqrt{3}} = \frac{5 \cdot 380}{100 \cdot \sqrt{3}} = 11 \, V$$

$$A = \frac{\rho}{e_{meg}} \cdot [i_{1W} \cdot l_1 + i_{2W} \cdot (l_1 + l_2)] =$$

$$= \frac{0,03}{11} \cdot (45,63 \cdot 50 + 30,42 \cdot 150) = 18,66 \, mm^2$$

$$A = 18,66 \, mm^2$$

$$b) A_{szabv} = 25 \, mm^2$$

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$$c) I = \sqrt{(i_{1W} + i_{2W})^2 + (i_{1m} + i_{2m})^2} =$$

$$= \sqrt{(45,63 + 30,42)^2 + (34,22 + 40,56)^2} = 106,65 \, A$$

$$I_{meg} = 107 \, A > I = 106,65 \, A$$

25 mm² Melegedésre megfelel!

melegedésre megfelel

$$a) i_1 = \frac{P_1}{U} = \frac{6000}{110} = 54,55 \, A$$

6.7. feladat

$$i_2 = \frac{P_2}{U} = \frac{10000}{110} = 90,9 \, A$$